REMARKS

This paper is being provided in connection with filing a Request for Continued Examination (RCE) the above-referenced application. The following remarks address points raised in the most recent Office Action for this case dated September 1, 2005.

The rejection of claims 63, 66-80 and 83-96 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,324,654 to Wahl et al. (hereinafter "Wahl") in view of U.S. Patent No. 6,836,862 to Erekson, et al. (hereinafter "Erekson") is hereby traversed and reconsideration thereof is respectfully requested.

Claims 63 recites a method for performing data recovery in a computer system that includes sending data from a first storage device to at least one other secondary storage device, the data being sent in a plurality of data packets, each of the plurality of packets being associated with a sequence number having a first predetermined value, upon determining that the data has been successfully stored on all of the at least one other storage device, deleting journal entries in a sender corresponding to the data and, upon determining a failure in connection with synchronizing data between a first storage device and at least one other secondary storage device, deleting journal entries in each of the at least one other secondary storage device, and resending unsynchronized journal entries from the sender by sending a plurality of data packets all having a same sequence number lower than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, where data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and where data packets having the same

sequence number represent different data. Claims 66-79 depend, directly or indirectly, from claim 63.

Claim 80 recites a computer program product for performing data recovery in a computer system that includes machine executable code that sends data from a first storage device to at least one other secondary storage device, the data being sent in a plurality of data packets, each of the plurality of packets being associated with a sequence number having a first predetermined value, machine executable code that, upon determining that the data has been successfully stored on all of the at least one other storage device, deletes journal entries in a sender corresponding to the data, and machine executable code that, upon determining a failure in connection with synchronizing data between a first storage device and at least one other secondary storage device, deletes journal entries in each of the at least one other secondary storage device, and resends unsynchronized journal entries from the sender by sending a plurality of data packets all having a same sequence number lower than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, where data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created and where data packets having the same sequence number represent different data. Claims 83-96 depend, directly or indirectly, from claim 80.

Wahl discloses a computer network remote data mirroring system that writes update data both to a local data device (16) and to a local, chronologically sequenced journal storage area (18). If the local computer system crashes, upon recovery or re-boot of the local computer

system, the two most current updates from the journal storage area (18) device are written to the local data device (16) to assure that the data stored on the local data device is current. Figure 2 shows that the journal storage area (18) may be organized as a circular queue. Column 7, lines 18-22 disclose that each entry written to the journal storage area (18) consists of data and a header where the header contains information, such as a timestamp, sequence number, device offset, and size of the transaction that is used by other system components. Column 9, lines 32-37 of Wahl disclose that the header contains, *inter alia*, a global sequence number (unique between all journal devices) and a local sequence number (unique within a current journal device) and that the sequence numbers are used to ensure that the order of the data entries in the journal storage area (18) exactly follows the sequence in which they are generated. as indicated in the office action, Wahl does not teach sending a plurality of data packets all having a same sequence number lowered than sequence numbers associated with other unsent packets and then sending any remaining data packets having a next higher sequence number, wherein data packets having the same sequence number are sent in an order that is independent of an order in which the data packets were created.

Erekson discloses a system that monitors data transfer between wireless devices such as Bluetooth-enabled transceivers. Figure 5 illustrates a format for a data header (420) used for a data packet (400). The header (420) contains a plurality of fields including a sequence number field (550). Column 9, lines 20-27 state:

> In the present embodiment, SEQN (Sequential Numbering Scheme) 550 is a numbering field to distinguish new packets from retransmitted packets. The SEQN 550 bit is toggled by the transmitting device *for each new packet transmission.* A retransmitted packet keeps the same SEQN 550 bit. If two consecutive packets are received with the same SEQN 550 bit, the second packet is ignored by the receiving device. (emphasis added)

Erekson goes on to describe, at the bottom of column 9 through the top of column 10, that a sender toggles the sequence bit upon receipt of a signal from the receiver indicating that the previous packet was successfully transmitted. If teh sender does not receive such a signal, the sender retransmits the previous data packet with the same sequence bit. Erekson also describes that if the receiver receives consecutive data packets having the same sequence that value, the receiver and ignores the second packet.

The present claimed invention includes a feature where a plurality of data packets having a same sequence number are sent in an order that is independent of an order in which the data packets were created where data packets having the same sequence number represent different data. This feature is described in the present application and illustrated, for example, by Figure 8 and the corresponding description on page 20 of the specification. Data packets from two independent chains may be assigned the same sequence number and written to the secondary storage device in any order. Thus, for recovery operations (e.g., the step 306 of Figure 16), the data corresponding to the same sequence number may be provided in an order that is independent of an order in which the data packets were created, as recited in Applicant's independent claims. The data packets represent different data, not the same data retransmitted.

Applicants respectfully submit that the deficiencies of Wahl noted in the office action with respect to this feature are not overcome by the addition of the Erekson reference. Instead, Erekson, like Wahl, discloses each data packet receiving a unique sequence number. In the case of Ericsson, the sequence number is a single bit that is toggled for each packet in order to

provide a mechanism to detect when a packet is not received and/or to detect when the same packet has been transmitted twice. Erekson, like Wahl, has no plurality of packets with a same sequence number that may be transmitted in any order where data packets having the same sequence number represent different data. Rather, for the scheme of Erekson, two packets having a same value for a sequence number must have an intervening packet with a different sequence number. That is, for example, two packets having a sequence value of one must have a packet having a sequence value of zero interposed therebetween and, more to the point, those two packets would be order dependent.

In addition, although Applicant disagrees with the point that retransmission of the same packet in Erekson is the same as transmitting a plurality of packets having the same sequence number, the claims as currently drafted specifically recite that the data packets having the same sequence number represent different data. In contrast, Erekson, at best, discloses retransmitting a packet for the *same* data with the *same* sequence number.

Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 508-898-8603.

Respectfully submitted,
Muirhead and Saturnelli, LLC

Date: February 1, 2006

Donald W. Muirhead
Registration Number 33,978

Muirhead and Saturnelli, LLC
200 Friberg Parkway, Suite 1001
Westborough, MA 01581
(508) 898-8601 (main)
(508) 898-8602 (fax)